Method for Producing the Rotor of a Drag Vacuum Pump and a Rotor Produced According to this Method

PATENT CLAIMS

1. Method for producing a one-piece rotor (1) for a drag vacuum pump (21) which is designed, at least in sections, as a turbomolecular vacuum pump with rotor blades (5) and stator blades (9). The rotor (1) has a hub (2) whose peripheral surface supports the pump structures. The rotor-side pump structures consist, at least in sections, of blades (5), which are arranged in rows (4) and which are formed from the surface of a blank by means of metal cutting operations. The metal cutting operations consist of producing radial peripheral grooves (3) into which stator blade rows (9) engage when the pump is assembled, **wherein** another metal cutting operation involves providing the outer surface of the blank with one or more thread grooves (13).

2. Method according to claim 1, **wherein** initially the thread structure is produced by milling and thereafter the peripheral grooves (3) are produced by turning.

3. Method according to claim 1, **wherein** the thread structure and the peripheral grooves (3) are produced by turning.

4. Method according to claim 1, **wherein** first the peripheral grooves (3) and thereafter the thread structure are produced.

5. Rotor (1) manufactured according to the methods of one of the preceding patent claims, **wherein** the thread grooves (13) and the peripheral grooves (3) form rotor blades (5).

6. Rotor (1) according to claim 5, **wherein** it exhibits over its entire height thread grooves (13) and section-wise peripheral grooves (3).

7. Rotor (1) according to claim 5 or 6, **wherein** the depth of the grooves (3, 13) decreases at least in sections from the intake side (11) towards the delivery side (12)[3] of the rotor (1).

8. Rotor (1) according to one of the claims 5 to 7, **wherein** it carries on its delivery side (12) a coaxially arranged cylinder (25).

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3) **Translator's note:** The German text states "812)" here whereas "(12)" would be more in line with the drawing figures. Therefore the latter has been assumed for the translation.